AMERICAN

JOURNAL OF PHOTOGRAPHY.

Published by THOS. H. McCOLLIN.

VOL. 4. PHILADELPHIA, MARCH 1883. No. 3.

(From the Photographic News.)

TWELVE ELEMENTARY LESSONS IN DRY-PLATE PHOTOGRAPHY.

Eleventh Lesson.—Third Lesson on Development.

The photographer who has followed our instructions to the present point will so far have produced only means to an end; the end itself will be nowhere visible. He has made the materials for a picture, but the picture has still to be constructed from these materials. However delightful a negative may be to the photographer as containing infinite possibilities, it is to the common eye by no means a thing of beauty. Every shade is, as we explained, reversed; before a natural effect can be produced these shades must be re-reversed so as to represent those of nature. This is commonly done by resorting to the process of printing. This process consists in the placing in contact with the negative a sensitive film usually supported on paper, and allowing light to act upon it through the negative—the effect being, as a little consideration will show, a reversal of all shades.

There are many printing processes, all of which may be studied with advantage by the amateur. Each one has certain advantages, and some are especially suited for certain purposes; but the process which, on the whole, has held its own against all others, and which for general purposes seems not likely to be soon superseded, is that known as "silver printing on albumenized paper." We propose to describe this, and to leave our readers to refer to more advanced or more special treatises for instructions in the various other processes.

"Ready sensitized" albumenized paper is now an article of commerce, and its convenience is so great that we should recommend its adoption by the beginner, and shall here describe the manipulation of such paper before we give instructions in the sensitizing of paper for immediate use. When the photographer has thoroughly mastered the process of printing, he will probably find that he can gain a higher degree of excellence by sensitizing his own paper; but certainly at first the contrary will be the case.

It is advisable to take a trial print from every negative before the process of varnishing is performed, and, in fact, if ready sensitized paper—which is always quite dry—be used, varnishing is not absolutely necessary. It is often advisbale, however, and we shall describe the process before entering upon the subject of printing.

After the negative is thoroughly washed and quite dry, take it by that corner which, were it a printed page, would be the left-hand bottom corner. Let it be warmed gently over a gas burner till it feels just warm enough to be pleasant to the touch. If a gas burner fixed above the level of the operator's head be used, a good criterion of the proper temperature is gained by watching the moisture which condenses on the plate from the water formed by the gas flame. When the moisture at first condensed is dispersed, and no more will condense on the plate, it is just at the right temperature. Let the plate be now held level by the corner mentioned between the finger and thumb of the left hand, while the varnish bottle is held in the right hand. Let a large pool of varnish be gently poured

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on to the centre of the plate. Let the plate be gently "tipped" so as to cause the varnish to flow first to one corner and then to another, beginning at that opposite to the one by which it is held. When the varnish comes round to the bottom right-hand corner let the plate be tipped slowly up to a vertical position, so that all the excess of varnish may flow back into the bottle. The plate must be rocked from side to side during this part of the process to prevent the formation of crapey lines. When all the excess of varnish has flowed off, the plate must be again warmed—this time till it is about as hot as the hand can bear. When it is cold it is ready to be printed from. There is a vast difference between plates as to the ease with which the varnish will flow over them. The process is one which should in no case be performed over a choice carpet.

In printing with albumenized paper, a printing frame is used. This apparatus is of various forms, but all these forms have the same object. They keep the paper in close contact with the negative, and are so constructed that one-half of the print can be examined at any time, while the other is kept in contact with the negative to prevent it from slipping. In frames made at the present day the necessary pressure on the backs is gained by the use of springs. For small negatives, the frame is usually made exactly to fit the plate. In the case of large negatives, the frame is generally made somewhat larger than the negative for which it is intended, and is fitted with plate glass, against which the negative is placed. The pressure of the springs would be liable to break a large negative, were it not thus protected. In the case of large negatives it is also necessary to use a pad of felt between the paper and the back of the frame to insure contact.

We shall suppose that our beginner has purchased a printing frame and a certain amount of ready sensitized paper. Let him cut the paper to about the size of the negative he has determined to print from. Now let him place a piece of paper under the negative in the frame, and place the whole outside in a bright, diffused light. It is not generally advisable to print in full sunlight. After the operation has gone on for a short time—say five or ten minutes—the result may be ascertained by taking the frame into a weak light on examing the print, one-half at a time. The print must be made considerably darker than is required finally. The exact amount of depth that is lost in the after processes can only be learned by experience, but we may roughly say that it is necessary to print for about twice as long a time as that required to give a pleasing result in the frame.

When the desired number of proofs have been printed, the paper should be trimmed to the correct size. This is generally done with scissors, using cutting molds or thin plates of glass," which can be had of any size. Many prefer to trim their plates after they have gone through the various processes of toning, fixing and washing; but there are various advantages in trimming before toning. The clippings, if kept, become, when a large quantity has accumulated, of value; there is a saving of toning solutions, and the trimming is far easier to do before washing, as the paper lies flat; whereas, afterwards it curls up in a way which makes it difficult to manipulate.

The following solution should be prepared for toning:

Chloride of gold	15 grains.
Acetate of soda	1 ounce.
Water	15 ounces.

The chloride of gold is purchased in small sealed bottles holding fifteen or thirty grains each. One of these bottles is placed in a bottle capable of holding the whole solution; when there it is broken by striking it with a glass rod, due care being taken not to break the bottle, which is quite possible. The acetate of soda is then added, and the water being poured in the whole is shaken till the acetate dissolves. The solution must be kept at least twenty-four hours before being used, and must not be exposed to a strong light. It should be labeled "Toning solution, one grain

to the ounce." The other solution which is required is three ounces of hyposulphite of soda to each pint of water, and should be labeled "Fixing solution for prints."

It will be noticed that the prints as they come from the frames are of a more or less unpleasant color. The operation which is to be described and which is called toning, is intended to correct this defect, and to give them the pleasing color we are accustomed to see. The process consists in covering the image with an exceedingly thin film of gold.

Toning may be said to be at once the easiest and the most difficult photographic process. Nothing is easier than to *tone*, nothing more difficult than to tone *well*. Any one can change the color of a print to a sort of slatey gray; there are not very many who can be sure of getting at all times a pleasing tone and the exact tint required. The difficulty lies in the direction so common in photographic operations. A certain result is gained, but the after processes modify this result, so that great experience is necessary to know beforehand what will be the final appearance of the subject.

We shall describe as exactly as possible the operations, and for the rest, as in so many cases, the beginner must look to intelligence and experience for success.

The toning solution mentioned in the first part of our lesson is too concentrated to use as it is; it must, therefore, be diluted. The common practice is to use a large quantity of toning solution, and if it is not exhausted, to keep it for after use. This is very well for the professional, who tones at regular intervals, but in the case of the amateur we think it is not advisable. The solution once used is very liable to "go bad," the gold being deposited at the bottom of the bottle. We therefore recommend that the beginner estimate the amount of toning that will be necessary, allowing a little margin, and after he is done throw it away. The waste will be very small—so small that it will not be found worth while to keep the liquid as a residue. If the prints be trimmed before toning, one grain of gold is amply sufficient for each sheet of paper measuring 18 inches by 22 inches. Let, therefore, one ounce of this solution be taken for every sheet of paper, and let it be diluted with six or seven times its amount of water.

Now let the prints be taken one by one and placed in any dish which is suitable for washing them in; a common small wooden tub is the best of all. Let the prints be kept from sticking to each other, and be moved about by hand. It will be seen that the water becomes milky from the nitrate of silver in the paper forming chloride and carbonate of silver with the salts in the washing water. The water must be changed several times till this milkiness disappears entirely, or almost so. Now the prints are ready for toning. The washing is best done by the light of a candle or lamp, as such will not affect the paper. The toning must be done in feeble white light, as it is difficult to judge of colors by yellow light. It is best performed in a flat white dish at least an inch larger each way than the prints.

Let one print be taken from the washing water and placed in the toning, first face downward, then turned face up, then down, once or twice, so as to allow the solution to act evenly on it. Now let another print, and perhaps two or three more, be similarly placed in the solution. It will be noticed that the prints during washing, turn to a brick red. In the toning they will turn to a brown, and gradually to a violet or purple. They must be kept in constant motion. The best plan is to keep continually lifting the undermost print and placing it on the top. At first only a few prints should be attempted; after some practice a dozen or two may be in the solution at once. When many prints are toned together it is a good plan to have two dishes of toning, side by side, and keep lifting the prints out of one into the other, the whole of the prints being turned over

in a mass when they are all in one dish.

The difficulty is the one indicated before, viz., at the time of toning to discount the change which will take place during the after processes. The difficulty is greatly increased by the fact that every brand of paper acts in a somewhat different manner from any other. Very few ready sensitized papers will stand being pushed to the purple stage; that is to say, if the toning is continued to the purple, the final result will be disappointing, although the prints will look beautiful before fixing. It is usually advisable to remove the prints from the toning solution while they are still of a very warm brown in the shadows. It is a good test to watch the half tones, and when these begin to become purple or violet to remove the print. The prints when removed are placed in another dish of clean water. They must be moved about for a short time after first placing them there, so as to get rid of the greater part of the toning solution which is in the pores of the paper, and which would make the toning proceed after it was desired to stop it. When all the prints have passed through the toning bath they must be washed in several changes of water, being kept moving for about five minutes during each change. Now comes the fixing; the prints are removed from the washing water and are placed in a flat dish. Sufficient fixing solution to quite cover the prints is poured in, and they are kept moving for about twenty minutes. More than one change of color will be noticed during this time. The first will be an almost total loss of tone; afterward the color will return to something like its former self. A further change will take place when the prints are dried. After fixing, it is necessary to wash the prints most thoroughly for not less than twenty-four hours. This is best done in running water, but if this cannot be had, then frequent changes will do. The smallest trace of hyposulphite in the prints will cause them to fade.

The prints, after washing, are allowed to dry spontaneously, being placed on any clean surface; or they may be mounted wet on card-board. In either case they should be afterwards rolled. A rolling press is an expensive article; but the amateur can generally find some neighboring photographer who will roll his prints for a small consideration.

The great convenience of ready sensitized paper is that it will keep for a very considerable time, either before printing or between printing and toning. The means of preparing such paper is at present a trade secret, and when the amateur prepares his own paper he will find that it will turn brown in about twenty-four hours. He must therefore do his sensitizing and toning all in one day. If he has time to do this he will probably be rewarded by superior results. We shall therefore describe the process of sensitizing.

"Salted" albumenized paper is purchased—that is to say, paper coated with albumen which is impregnated with soluble chlorides.

A "silver bath" is prepared by dissolving nitrate of silver in distilled water. The strength of the bath varies with the paper used. Every dealer in albumenized paper will state what strength of bath is best to use for each particular brand. One containing sixty grains of nitrate of silver to each ounce of solution will suit most papers. Enough of this must be prepared to cover the bottom of the flat dish to be used in sensitizing to a depth of at least one-eighth of an inch. The dish should be half an inch larger than the paper in each direction. If much paper is to be used it is best to sensitize in large pieces and cut it into sizes before printing. Professional photographers usually sensitize a whole sheet at a time.

A room lighted by a lamp or gas is the best in which to carry on the sensitizing process. Strings should be stretched in convenient positions for hanging the paper on to dry. Lockwood's clips are useful for fixing the paper to the strings.

Let the silver solution be poured into the bath, and let a piece of the paper

be taken by opposite corners and with the albumenized side downward. Let the paper be so held that it will first touch the surface of the solution in a line between the two corners not held by the hands. We again take the simile of a printed sheet. Suppose the paper held by the right hand upper and left hand lower corners. Now let the left hand upper corner touch the surface of the solution, and let the paper be lowered till it touches in a line from the left hand upper and right hand lower corners. Now let the two corners held in the hands be dropped, first one and the other. This sounds elaborate, but is very simple in practice. If it be carried out properly there will be no air bells under the paper, but it is best to lift it from the solution after about a minute and look, to make sure. If there are any, they can be broken by gently moving about the paper while one-half is held out of the solution.

The time of floating varies with different papers and different strengths of baths. It should be ascertained when the paper is purchased. With a sixty grain bath from three to five minutes is usually ample. If the paper curl out of the bath at the edges it may be caused to lie flat by blowing on it.

After the specified time has elapsed let the paper be removed from the bath by drawing its surface over one edge so as to drain off most of the silver solution. It is only necessary now to bring it up by one corner to dry. A small piece of blotting paper should be caused to touch the lower corner immediately after it is hung up. This will adhere by capillary attraction and catch a drop or two of solution which would otherwise fall on the floor.

If the room be warm, the paper will dry in ten minutes or a quarter of an hour.

When it is dry, printing, toning, etc., are performed as described for ready sensitized paper. Good paper, sensitized as described, may be toned to a far deeper purple than the paper purchased ready sensitized.

The silver solution becomes weaker through use, and it is necessary to strengthen it at intervals. Its strength can be ascertained by the use of an "argentometer," which is a cheap form of hydrometer specially graduated for grains of silver per ounce of water.

The solution must be filtered every time it is used.

Directions for using the Philadelphia Extra Rapid Dry-Plates.

These Plates being sensitive to yellow rays, it is necessary that the light used in the dark room must be of a ruby color. The window should be covered with dark ruby glass or "Translucent Ruby Paper." If the sun shines on the window there should be also one or two thicknesses of yellow envelope paper placed inside the ruby glass, and even then the plate should not be held near the window for too long a time while developing.

The camera should be carefully examined to be sure there is not even a pinhole for white light to enter.

If the Plate Holders and inner frames have been previously used for the wet process, they must be carefully cleaned and varnished before being used for gelatine plates, as the silver, if it touches the plate, will produce stains and fog.

Dishes made of Japanned Ware are very convenient for holding the plate while developing. They may also be used for the Alum and Hypo solutions. They must be each kept for its own solution. Scratch a mark on the bottom of each that can be recognized in the dull light of the dark room, and after using wash well and stand up to drain; with this care they will last a long time.

The graduate, or other vessel, used for holding the developer, must be washed clean every time it is used, and the fingers, towel, bench and floor kept free from Hypo.

Alkaline Developer for Bridle's Gelatine Plates.

No. 1.

Pyrogallic Acid	1 oz.
Glycerine	1 oz.
Alcohol	7 oz.

No. 2.

Washing Soda . . . . . 2 lbs.
Water . . . . . ½ gal.

No. 3.

Saturated Solution of Sulphite of Soda

No. 4.

Bromide of Ammonium . . . . . 30 grs.
Water . . . . . 1 oz.

To develop a 5 x 8 plate, take of No. 1, 20 to 30 drops; of No. 2, two ounces; water, 2 ounces; of No. 3, 20 to 30 drops, and flow over the plate in a dish. The picture should begin to appear soon after the developer covers the plate, and should then *gradually* gain in detail and intensity. But if the detail is coming up too rapidly, add at once a few drops of No. 4. If the negative should appear to be lacking in density, add more of No. 1. And if it should be slow in developing, pour away the developer and mix fresh, using No. 2 as it is, without water. When sufficiently developed, which will be known by seeing the shadows of the picture just beginning to lose their brightness—looking a little grey instead of pale yellow—wash the plate, and put into a dish containing a saturated solution of alum, to every 8 ounces of which has been added 5 drops pure muriatic acid. Allow the negative to soak in this for three or four minutes, then wash a little, and place in the hypo solution—a saturated solution of hyposulphite of soda diluted with an equal bulk of water. Let the plate remain in this for at least a minute after all the bromide of silver appears to be dissolved, then wash well, and place in the alum bath again for a few minutes, and finally wash under the tap for ten minutes. Until the plate is quite fixed, no other light should be admitted but that passing through the ruby glass or paper.

It will be found that this treatment will produce a negative having all the rapid printing qualities of a wet plate.

If the plate has been *under*-exposed the detail in the shadows will not appear, and the contrast will be too great.

If it has been *over*-exposed the detail in the shadows will show at the same time as the lighter parts of the picture, and there will be a great want of contrast. If this is the case immediately add 5 or 6 drops of the bromide solution, and from 10 to 20 drops of pyro. It is best to *slightly* overexpose, as this can be remedied in the developing, either by using a more dilute solution of No. 2, or adding 2 or 3 drops of bromide at the commencement. Bear in mind the bromide (No. 4) retards developement—stops it altogether—if a large excess is used.

The soda (No. 2) accelerates development, and the pyro (No. 1) gives it density.

Ferrous Oxalate Development.

If ferrous oxalate should be preferred, take 1 pound neutral oxalate of potassium and dissolve in 48 ounces of hot water and test with litmus paper. If the paper remains blue after a few minutes add of a solution of citric acid a few drops at a time until the litmus paper just turns red.

Make a saturated solution of C. P. protosulphate of iron, and to this add 2 or 3 drops of acetic, or half a drop of sulphuric acid to each ounce of iron solution.

Both solutions should be allowed to settle clear, and carefully decanted or filtered before use. To make the developer, take of the oxalate solution 4 parts, and of the iron solution 1 part, pour the iron into the oxalate. The mixture will be of a ruby color and should be perfectly bright, if it is not it will be necessary to increase the proportion of oxalate.

If the exposure has been correct, on pouring the developer over the plate the picture will soon begin to appear, but if it is slow in coming 1 or 2 drops of hypo sulphite solution (1 part hypo to 100 parts water) will quicken it, but care must be used, for if too much is added fog is sure to be the result.

If a softer negative is required, use 5 or 6 parts of oxalate to 1 of iron; if it developes too thin add about half the quantity in the dish of an old developer, this will give density. It is well to use the alum bath after fixing and wash-

ing, as it removes the oxalate of lime which is often formed in the film if the washing water is hard.

These plates are particularly recommended for producing bright, easily developed negatives, having the quick printing qualities of a wet-plate with much finer results, requiring only half the amount of retouching in portrait work, and making it easy to secure certain classes of work that would be found difficult or impossible with the wet plate.

Mercury Intensification.

Dissolve one half ounce of bi chloride of mercury and one-half ounce of chloride of ammonia in sixteen ounces of water, immerse the negative in this, but only for two or three seconds, unless it is desired to make it very intense; well wash, and immerse in a 12 grain solution pure cyanide saturated with nitrate of silver until the film is uniformly darkened through, then wash and dry.

To reduce a too intense negative, use the above mercury to whiten; then after washing immerse in a fresh 10-grain solution of cyanide until the reduction is carried as far as may be desired; wash again and dry.

Varnishing.

A proof may be taken before varnishing, and if found satisfactory, the negative, if a portrait, may be retouched before varnishing; use a good quality of varnish—McCollin's Silicated Castor Varnish is especially prepared for gelatine negatives.

A PERPETUAL CALENDAR.

Our friend, JOHN R. CLEMONS, of this city, has just presented us with a copy of his recently published Calendar, the result of many years study and labor.

This Calendar gives you any day or the month of year, from the commencement of the Christian Era to the year 4,099.

It is probably the most complete work of the kind that has ever yet been published, and our friends in the profession will be glad to know that the author of it is "one of us," the veteran John R. Clemons.

Copies can be procured at this office, or from the author, whose address is 925 Sansom Street, Philadelphia. The price for a single copy is 25 cents.

OF all measures for removing stoppers from bottles, when tightly locked, few areso generally efficacious as a steady tapping with a hard piece of wood. Hold the bottle tightly against the table or bench, and a few smart taps administered in a slighly upward direction, first on one side, and then on the other, of the stopper. After a few taps in this manner, the stopper will have become loosened. It may also be loosened by tapping the neck of the bottle against the table, but in this way the bottle is more liable to be broken through the administration of a tap just as the separation of the stopper is taking place. Another method of overcoming the difficulty is the immersion of the bottle in a vessel containing warm water, and allowing it to remain a few hours, or over night if necessary; but generally, after four or five hours, the stopper will have become loosened, and may be removed without any danger of breaking the bottle.

PLATES accidentally exposed to light may be made equally sensitive by the following method: Make a four per cent. solution of bichromate of potash, and immerse the plates for about ten or twelve hours. Then place them in running water for about twice the above time—the longer the better—as the slightest trace of bichromate left in the film keeps that part insensitive, according to the amount left.

Ye Monthlie Bulletin

OF

L. W. SEAVEY,

Hys Workeshop,

No. 8 Lafayette Place, N. Y.

1883.

This Studio has added a new department, it is now the New York office and salesroom of the Beebe Dry-Plate, manufactured at Chicago. A stock of these unrivalled plates have arrived by express, more are on the way. They are of recent and improved manufacture. Many testimonials given during the last month in Buffalo, Syracuse, Albany, Boston, New York attest their excellence. Your order is solicited.

BRIEFS.

Seavey's Plaques can be "printed in" for borders on Clench's Patent Plaque Mounts.

New sample prints of a few fine Curtains, Table Covers, and Druggets, sent on appplication.

Selections from our late importations of richly carved furniture will enhance the artistic value of your photos.

Many backgrounds ordered for Christmas work we failed to supply on time, rush too great. We need from one to six weeks to fill orders according to season.

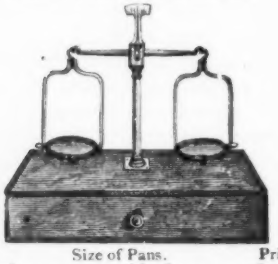
Many accessories can be supplied promptly, as we have a variety in stock.

We shall introduce shortly a new idea in Posing Chair, an adaption from the studios of Europe.

Seavey's Studio will undertake to furnish all kinds of material that tends to enhance the artistic side of photography.

Mem. Duryea, of Sixth Avenue exhibits a charming photo—pretty girl—"printed in" fan. 1—84.

Photo. Prescription Scales.



Beam.	Size of Pans.	Price
8 inches,	2¾ inches	$7.00
7 "	2¼ "	5.50
5½ "	2 "	4.00

Transparency Frames.

Fine nickel-plated frames with rings on end or side, for window Transparencies.

Size.	Price per doz.
4x 5	.30
5x 8	.35
5x 8 best	.40
8x10	$ 4.00
8x10 extra quality	6.25
11x14 " "	11.25

Finely Etched and Ground Glass for Transparency Frames.

Size.	Price per doz.
8x10	$ 5.30
11x14	10.00

In ordering the above, please say whether you want them with rings on the end or side.

BRUSHES.

A new lot of extra quality Round Red Sable Brushes, and at very moderate prices.

No. 1,	extra quality, each	$ .07
" 2,	" " "	.08
" 3,	" " "	.09
" 4,	" " "	.10
" 5,	" " "	.11
" 6,	" " "	.15
" 8,	" " "	.20
" 10,	" " "	.33
" 12,	" " "	.35
" 16,	" " "	.75

BRISTLE BRUSHES.

1	inch extra Paste, each	$ .10
1½	" " " "	.15
2	" " " "	.20
2½	" " " "	.25

CAMEL HAIR DUSTERS.

1	inch extra fine, each	$ .15
1½	" " "	.20
2	" " "	.25
2½	" " "	.40

CHEMICALS.

Subject to fluctuation. Bottles included.

Acid No. 8, Acetic	per lb	$ .20
" " 8, "	5 lb	.80
" Glacial "	per oz	.15
" " "	per lb	1.00
Acid, Nitric, Com	6¾ "	1.30
" " "	1 "	.31
" " C. P.	7 "	2.00
" " "	1 "	.40
" " "	½ "	.35
" " "	¼ "	.25
" Sulphuric "	"	.45
" " Com	"	.25
" Pyrogallic	per oz	.50
" "	½ "	.30
" Citric	per lb	.90
" "	per oz	.15
" Gallic	"	.15
" Formic	"	.30
" Muriatic	per lb	.40
" "	½ "	.30
" "	¼ "	.20
" Hydrobromic	per oz	.30
Alcohol, 95 pr ct	per qt	.85
" " "	½ gal	1.48
" " "	1 "	2.90
" Atwood's	1 qt	.90
" "	½ gal	1.60
" "	1 "	3.15
Ammonia Liq., Conc	per lb	.34
" " "	4½ "	.97
" Nitrate Cryst	per "	.45
" " "	½ "	.35
Ammonium, Bro	per oz	.15
" " French	"	.50
" Iod.	per lb	5.38
" "	per oz	.50
" " French	"	1.00
" Chloride, C. P	"	.14
Benzole, pure	per gal	4.50
Bromine	per oz	.35
Byrata, Nitrate	per lb	.45
" "	per oz	.10
Cadmium, Bro.	"	.30
" " French	"	.65
" Iod	"	.50
" " French	"	1.00
Calcium, Chloride	per lb	.80
" "	per oz	.15
" Iodide	"	.70
Chloroform	per lb	1.25
Copper, Acetate, Powd	per oz	.10
Carmine	30 gr	.15
"	per oz	1.05
Dextrine	per lb	.20
Dermaline	per bot	.25
Distilled Water(bottles 25 cents)	per gal	.37
Distilled Water, (no bottles)	"	.12
Ether Sulph	per lb	.87
" "	3½ "	2.83
Gold Chloride	15 grs	.60
" "	1 doz 15 "	6.50
Gum Arabic	per lb	.60
" Shellac,Orange	"	.70
" " Bleached	"	.75
" Sandarac	"	.60
" Damar	"	.63
" Turpentine	"	.23
Iodine	per oz	.55
Iron, Proto., Spirit Dry	per lb	.07
" " "	150 "	6.75
Iron and Ammonia Sulph.	per "	.15
Iron, Iodide	per oz	.50
Kaolin	per lb	.10
Lead, Acetate	per oz	.22
" Chl	"	.35
Litihum Iod,	"	.90
" Brom	"	.50
Mercury, Bi-Chlor	"	.15
" Chloride	"	.25
" Iod	"	.55
Magnesia, Nit	"	.16
Magnesium, Brom	"	.55
Oil, Lavender	per lb	2.50
" "	½ "	1.25
Potassa, Nit	per "	.30
Potassium, Bromide	per oz	.15
" Iod	"	.35
" Cyanide	per lb	.70
" "	½ "	.40
" Sulphate	per lb	.40
" Sulphuret	"	.40
" "	½ "	.25
" Bichromate	per "	.38
Potash, Oxalate	"	.50
Rotten Stone	"	.50
Silver, Nit.	"	12.75
" } Variable	½ "	6.56
" }	per oz	.85
Soda, Actate	per lb	.50
"	½ "	.35
"	¼ "	.25
" Bi-Carb	per "	.10
" Hypo (Scherings)	"	.06
" " "	keg 112 lbs	4.48
" Phosphate	per lb	.45
" Tungstate	per oz	.19
Sodium, Iod	"	.50
" Brom	"	.18
Strontium, Chl	"	.14
Silver, Oxide	"	.30
" Chl	"	1.50
Uranium, Chl	"	.90
" Nit	"	.95
Zinc, Brom	"	.45
" Iod	"	.60

Note our reduction on cut Ferrotype Plates. Best quality, egg-shell strface. Put up in boxes at prices as follows:

1 Box,	(8 doz.)	1-9	size,	.80
1 "	"	1/6	"	.80
1 "	"	¼	"	.80
1 "	(4 doz.)	½	"	.80
1 "	"	5x7	"	.80

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PHILADELPHIA

EXTRA RAPID DRY PLATES,

Specially Prepared for Making

BRIGHT NEGATIVES

With Pyro or Oxalate Development.

—THE BEST—

GELATINE DRY PLATES IN THE MARKET.

REDUCED PRICES.

Size.	Price per doz	Size.	Price per doz
3¼x4¼ inches	$ 65	8x10 inches	$3 60
4 x5 "	95	10x12 "	5 20
4¼x5½ "	1 00	11x14 "	6 80
4¼x6½ "	1 25	14x17 "	10 00
5 x7 "	1 68	17x20 "	16 00
5 x8 "	1 80	18x22 "	18 00
6½x8½ "	2 40	20x24 "	22 50
7 x9 "	3 00		

Double-thick Glass used on all sizes above 11x14.

Packed in light-tight boxes. Full instructions for development accompany each package of plates.

For Sale by all Dealers in Photographic Materials.

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The PHILADELPHIA DRY PLATE CO.,

3—84 No. 635 Arch Street, Philadelphia.

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$10,[$2, $18, $25, $26.50, $27, $35, $41, $78.50 and upwards.

A COMPLETE PHOTOGRAPHIC OUTFIT.

LIGHT AND DURABLE.

SANTA CLAUS SITTING FOR HIS PICTURE.

WE have in stock outfits for Amateur and Professional Photographers, and offer them at the following low prices:

No. 610. Is a 4x5 Camera Box, with double dry-plate holder, Tripod, Achromatic Lens and a carrying case.. ... .$10 00

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No. 618. Is a Cabinet and Stereo. Box, with above named accessories and 2 extra Lens..... ..... 18 50

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No. 627. Folding Camera for 4x5 pictures, with same accessories as No. 626..... .... 27 00

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The Photographic Times and American Photographer is now conceded to be the most valuable photographic journal in this country. Its circulation both at home and abroad among the professional and the amateur, is sure to be larger this year than any other photographic journal in the world. Mr. J. Traill Taylor will continue in the editorship, which is a guarantee of the high standard that will be maintained. The leading minds in the literature of photographic art are classed among its contributors. It contains the latest news, hints for practice, and its articles are full of original, interesting and valuable matter. Advertisements of parties desiring situations are inserted free. Rates for display advertisements or special notices sent on application.

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NEW LABORATORY,

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319 Washington Street,

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SOLE AGENTS IN THE UNITED STATES FOR THE CELEBRATED LENSES MANUFACTURED BY

VOIGTLANDER & SON.

ALSO, THE WONDERFUL

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A new objective of great illuminating power for all kinds of outdoor work. For groups and other work in the Studio, it will be found superior to the Portrait Lens.

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LARGE SIZES

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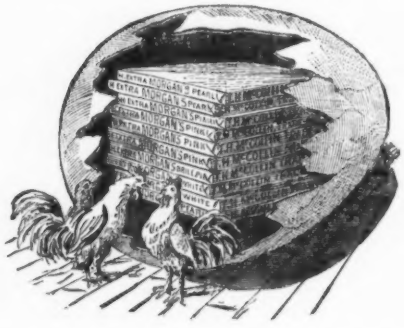
Double Gloss



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Matt-Surfaced Paper.

The demand for it has increased to such an extent that it is now an every day want—a necessity. Below we give a list of sizes, as follows:—

Size.				Price per dozen
20 x 24,	Double Gloss,	White,	Pink or Pearl,	$5.00
22 x 24	"	"	"	5.25
22 x 27	"	"	"	5.25
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The above prices are Net Cash. Photographers at a distance can order through their Local Stock Dealers, if they prefer, as our papers are sold by every first-class Photographic Stock House in the United States.

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THE PLATINOTYPE.

The Only Permanent Process for Enlargements.

The Most Beautiful for Landscapes.

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Manufacturers of

Fine Photographic Chemicals.

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To those who have not used it—GIVE IT A TRIAL.

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EXTRA RAPID DRY PLATES,

Warranted Perfect and Extremely Sensitive.

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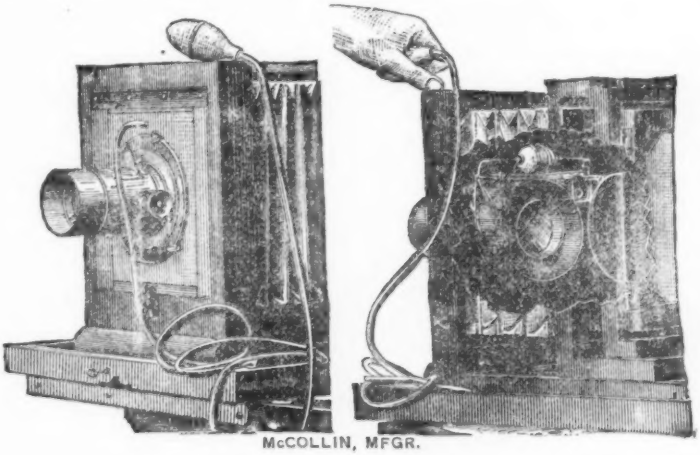
THE LIGHTNING SHUTTER!

THE LIGHTNING SHUTTER!

The following cut represents **THE LIGHTNING SHUTTER.** It is worked by pneumatic pressure. No string to pull and throw the Camera out of Focus—but is opened by a gentle pressure of the hand on a rubber bulb. By closing the hand the air is driven through a tube six feet long into the rubber air chamber.



McCOLLIN, MFGR.

The force of the air into this chamber inflates it and opens the two doors. When the pressure of the bulb in the hand is removed the doors close instantly. The exposure is made without the sitter knowing when it is done, as the shutter works on the inside of the camera box, and is perfectly noiseless. It is easily adjusted from one lens to another. Never fails to catch the "baby" unaware. Its construction is durable. It is quick acting and reliable. The best operators in the United States recommend them as the only shutter worthy of notice. If you would be happy, send in your order for one. If it does not give perfect satisfaction, your money will be refunded.

The prices are as follows:—

4 inch, $8.00. 4½ inch, $9.00. 5 inch, $0.00.

It will be packed free and sent to any address upon receipt of price.

For Sale by all

Photo Stock-Dealers.

ENLARGEMENTS

—BY—

ELECTRIC LIGHT

In Platinum.

HAVING increased our facilities for making Enlargements for the Trade and our new 50,000 Candle

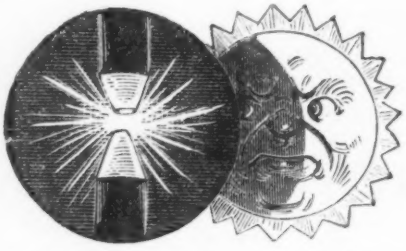
ELECTRIC LIGHTS

working admirably, we are now prepared to do your enlarging

MORE PROMPTLY THAN EVER BEFORE.

The enormous rush of business in this department is a sufficient guarantee that **PERMANENT PICTURES** are appreciated by everybody who sees them, and are recommended by every first-class artist in the United States and Europe.

Solar Prints TO-DAY.



Rain OR Shine

A dark rainy day does not hinder the working in this department. But we are prepared to make all size prints, from 8x10 to 52x80, and larger at all times, and in all cases guarantee a

First-class Picture.

No extra charge will be made when the original negative cannot be obtained. A copy negative will be made free by us, and the picture will cost the same as prices quoted on our Price Card, unless the picture ordered is less than 20x24, in which case we will charge 25 cents extra for each negative. As this process is so extensively known we CAN NOT mail sample prints free to any one.

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NEIDHARDT'S GELATINE DRY PLATES,

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PRICES OF NEIDHARDT'S PLATES.

Size.	Per doz.	Size.	Per doz.	Size.	Per doz.
3¼ x 4¼	$ .65	5 x 8	$1.85	11 x 14	$ 6.80
4 x 5	.95	5½ x 8½	2.40	14 x 17	10.00
4½ x 5½	1.00	8 x 10	3.60	17 x 20	17.50
4½ x 6½	1.25	10 x 12	5.20	18 x 20	20.00
5 x 7	1.65			20 x 24	24.00

11 x 14 and Larger, packed in boxes containing half dozen.

SOLD BY ALL DEALERS.

March Bargains.

20,000 Carte cards, job lot, per thousand,	$ 2.50
1 6 inch Eureka Burnisher, good as new.	11.00
1 6 inch Weston Burnisher, good as new.	12.00
1 11x14 A. O. C. Camera Box good as new.	25.00
1 Round End Balustrade.	12.00
1 24x24 Camera Box and Holder.	25.00
1 Ream H. Ex. Brill Pearl Albumen paper, slightly damaged on the edges, otherwise A, No. 1 paper	16.00
17,000 Cabinet cards, job lot, per thousand	5.00
50,000 R. C. Victoria cards, white "	3.00
2 8-4 Voightlander & Son Lens (a)	80.00
100 Gilt Rustics (a)	.15
1 4x4 Hilb & Son Lens	15.00
1 ½ size Darlot Lens.	12.00
2 11x14 Darlot View Lens (a)	12.00
1 4-4 Darlot Portrait	15.00
1 ¼ size Rapid Baby Lens	18.00
1 13x16 Steinhiel, an excellant Lens new price, $110.00.	80.00
1 6½x8½ Harrison Globe, an excellant lens, long focus	15.00
4 1-9 size Darlot Lenses	5.20
1 1 A. Dallmyer Lens	60.00
1 ¼ size imitation Dallmyer lens,	8.00
1 16x20 Orthoscopic lens, Harrison,	20.00
4 Reams, "J & S" trade marked, Brilliant Pink Albumen Paper, per ream	25.00
Sample dozen, by mail,	.70
1 4x4 Rapid Peerless good as new	40.00
1 Set (4) ¼ size Darlot Gem Lenses and Brass plate on Front-board	10.00
1 set (4) (P), same as above	12.00
1 Set (4) 1⅛ Darlot Gem lenses on block	$6.00
6 6½x8½ Printing Frames, (a)	.40
6 4 x7 Printing Frames,	.40
1 6½x8½ Deep Printing Frames,	.60
1 10x10 Deep Printing Frames,	.75
1 7x10 Hard Rubber Bath covered	3.50

OSBORNE'S

Picturesque Foreground Negatives.

Photographers are enabled by these Negatives to produce elaborate and beautiful scenic effects without the use of heavy and expensive studio accessories.

THE LATEST.

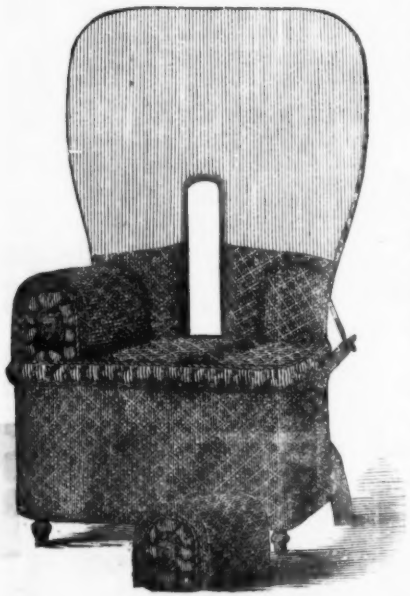
Photographers have long desired the means of printing in a manner a vignette picture which will give the photograph the appearance of having been worked by an artist in India ink or crayon. No. 17 Osborne's Foreground Negative is designed for this purpose. Send for sample.

For Sale by all Dealers.

1—84.

CROSS' BABY CHAIR, FOR $5.50.

CHAIR, HEAD-REST AND BACKGROUND COMBINED.



This common-sense Baby Chair has already been adopted by a great many of the leading photographers of the country, and is bound to work its way into all galleries that do anything in the way of baby picture making. One of the cuts represents the chair as it is. The framework is made strong and du rable: it is upholstered in a *beautiful pattern of imitation raw silk, with terry trimming, etc.* One arm can be removed at will, giving the chair more of the appearance of a sofa. The back, which forms the background, is covered with light background cloth, making an ex cellent background for Vignettes, etc. The chair back and seat are tilted readily, if desired to raise or lower the head, to better support it. The baby is placed in the chair and an assistant stands behind it and holds the baby in position by the aid of the opening in the back of the chair.

PHILADELPHIA.

As it appeared in a finished Photograph.